



Jurisdictional Review: Policies and Incentives to Promote Investment in Secondary Wood Manufacturing

Discussion Paper

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Table of Contents

1.0	Introduction.....	1
	Finland and Sweden.....	1
	Germany and Austria	2
	Malaysia and Indonesia.....	2
	Japan.....	2
	United States.....	3
	Washington and Oregon	3
	Southern Region	3
	Wisconsin	3
	Canada.....	3
	British Columbia.....	3
	Alberta and Saskatchewan	4
	Ontario and Quebec	4
	New Brunswick.....	4
	Forest Area and Harvest Volumes by Ownership Class.....	4
	Sales, Employment and the Number of Establishments.....	6
	Product Mix.....	7
	Wage Rates, Employment Levels and Adding Value to Wood Products.....	8
2.0	Factors Affecting Investment Decisions.....	10
3.0	Policies and Initiatives	11
	Jurisdictions with Higher Rates of Growth	11
	Jurisdictions with Lower Rates of Growth	11
	Commonalities and Differences	11
	Certification - Market Incentives Complementing Regulation	14
	Marketing.....	14
	The One-stop Access Model - Improving Access to Government Services -	14
	The Number of Policy Tools Used to Promote Secondary Wood Manufacturing	15
	Research & Development, Training and Marketing	15
	Development of Industrial Clusters and Networks	15
	Fibre Supply	15
	Labour Costs	16
	Identifying Barriers to Investment - the Environmental Scan	16
	The Allocation of Resources to Support Policies	16
	Secondary Wood Manufacturing in a Global Market Place	17
	Change in the Nature of Government Interventions	17
4.0	Conclusions.....	18
	References.....	19



EXECUTIVE SUMMARY

JURISDICTIONAL REVIEW: POLICIES AND INCENTIVES TO PROMOTE INVESTMENT IN SECONDARY WOOD MANUFACTURING

Introduction

This summary presents the results of a review of policies and incentives to promote secondary wood processing in 22 separate jurisdictions. The purpose of the review was to identify insights, opportunities and lessons to inform future policy decisions in BC. The following jurisdictions were selected for review:

Finland	Canada	United States
Sweden	• British Columbia	• Texas
Germany	• Alberta	• Washington
Austria	• Saskatchewan	• Wisconsin
Indonesia	• Ontario	
Malaysia	• Quebec	
Japan	• New Brunswick	
		• Alabama
		• Georgia
		• Louisiana
		• Mississippi
		• North Carolina
		• Oregon

These jurisdictions differ greatly in terms of their forest endowment, the extent to which forests are publicly or privately owned, the prominence of secondary wood manufacturing in terms of overall wood manufacturing; the reliance on export versus domestic markets; the cost of labour; and the rates of growth in secondary wood manufacturing (as measured by the values of sales). Yet the issues that they are confronting have much in common with BC.

Background to the Jurisdictions Examined

Forest Area and Harvest Volumes by Ownership Class: Indonesia, Malaysia and provinces within Canada typically have higher levels of public ownership of the forest resource while the United States, Japan and the European nations have lower levels. This pattern is reflected in the relative dependence on timber volumes originating from public or private lands for each of the jurisdictions. Highest rates of growth in sales of secondary wood products have generally been associated with higher degrees of dependence on fibre volumes from private sources.

Sales, Employment and the Number of Establishments: The contribution of secondary wood products to wood product manufacturing varies in each jurisdiction but there are broad regional trends. Eastern Canada, many of the states from the Southeastern part of the US, Finland, Sweden and Japan all have relatively strong secondary wood manufacturing sectors that account for about half of all sales of wood products and employ about half the workforce engaged in wood products manufacturing. Germany, Austria, Texas and Wisconsin are even more dependent on secondary wood manufacturing. At the other end of the spectrum, Indonesia, Malaysia, BC and the Pacific Northwest, for example, are more dependent on primary production.

Wage Rates, Employment Levels: Jurisdictions with the highest recent rate of growth in value-added (Malaysia and Indonesia) had the most significant growth in the labour force and the lowest wage rates. Wage rates in other countries are similar, with paper and paper products showing the highest wages, wood products second highest and furniture products third highest. The substitution of capital for labour is evident in many of the countries examined. Austria has experienced a fairly high rate of growth in value added for furniture products but has also maintained one of the highest wage rates for this sector.

Policies

Public policy promoting secondary wood manufacturing is designed to effect positive changes in the many factors considered in the manufacturer's decision to locate, relocate or expand. The types of policies identified for each jurisdiction are presented in the attached table. Themes and conclusions of the review are presented below.

Jurisdictions with Higher Rates of Growth: Alberta, Saskatchewan, Alabama, Georgia, Texas, Wisconsin and Mississippi are among the jurisdictions with the highest growth rates in terms of sales. While it is accepted that high rates of growth may be associated with non-policy factors, policy characteristics common for most of these jurisdictions appear designed to be:

- Comprehensive and non-sectoral;
- Supportive of a "critical mass" of activity to attract investment;
- Outward looking (export trade-oriented);
- Focused on marketing;
- Entrepreneurial; and
- Non-subsidizing.

Jurisdictions with Lower Rates of Growth: Ontario, Japan, Oregon, Washington, New Brunswick are included among those jurisdictions with lower rates of growth. These jurisdictions appear to be more dependent upon:

- targeted programs; and
- fewer policy tools.

In general, a less coordinated approach to attracting increased investment in manufacturing seems to be associated with lower rates of growth.

There are notable exceptions to the rule including Finland and Sweden which have had lower rates of growth but whose policies have characteristics that are common to jurisdictions with higher rates of growth.

Forest Certification: In the last few years, some jurisdictions have directed their attention to developing frameworks for forest certification to prove the sustainability of forest management. Finland, Sweden, Germany and Austria have identified certification as a tool to strengthen and promote the acceptance and demand for wood products and have made strong statements regarding the marketing advantage that can be realized through certification. Members of the ITTO (International Tropical Timber Organization) have also embraced certification. In particular, Malaysia has identified certification as one means to overcome growing market resistance to their wood products in nations like Germany and Austria.

One-Stop Access: Jurisdictions taking a flexible, coordinated approach to marketing have performed well, show higher rates of growth in sales for secondary wood products. For example, in Texas and Wisconsin, marketing to investors has been undertaken by non-sectoral economic development agencies and efforts are not targeted specifically to secondary wood manufacturers. In Alabama, the Forestry Commission takes the lead, marketing to wood processors through the Alabama Forestry "TEAM". "TEAM", works closely with its clients to identify and respond to their needs, drawing on programs and initiatives across government, often taking on the role of "deal maker".

Promoting Secondary Manufacturing Through Broader Policy Frameworks: Jurisdictions with higher rates of growth make greater use of policy tools and tend to view the promotion of secondary wood manufacturing within the broader context of industrial development. Scarce program resources are pooled to address issues that span industrial sectors and efforts are taken to ensure that programs designed for one sector do not unnecessarily constrain other sectors.

JURISDICTIONAL POLICY REVIEW

Targeted Policies: Jurisdictions with policies which specifically target value-added activities appear to have been less successful at coordinating policy development and as a result have often been obliged to adapt particular policies to the broader policy environment.

Supporting the Efforts of Small Businesses to Improve Competitiveness: Compared to primary processors, the secondary wood manufacturing industry tends to be fragmented with a large number of small and medium-sized enterprises. These enterprises often lack the resources to undertake the marketing, training, research and development and supply chain development. These weaknesses inhibit the competitiveness of small and medium-sized enterprises in the long-term and some jurisdictions have implemented policies to address them by linking together businesses with common interests and needs. For example, North Carolina has developed a program to improve cooperation between wood manufacturers whose products and needs complement each other. Malaysia has supported the development of industrial parks to provide common infrastructure and resources for small-sized furniture producers. Finland has promoted the development of *industrial clusters* around forestry.

Improving Accessing to Fibre on Public Land: Jurisdictions identifying fibre access as an issue tend to have a large proportion of their forest landbase under public ownership. Policies to improve access to fibre have varied. Indonesia and Malaysia have imposed bans on log exports and export taxes on primary wood products. These measures tend to increase the cost of export oriented primary wood manufacturing and increase the flow of fibre to secondary manufacturers. Other jurisdictions have developed tenure arrangements where timber rights are granted on the condition that fibre is provided to secondary manufacturers. British Columbia's Small Business Forest Enterprise Program is one example. New Brunswick has designed tenure arrangements where a portion of timber harvested is allocated to secondary manufacturers. Stumpage policies have also been used to encourage secondary wood manufacturing. For example, in Saskatchewan, forest companies not holding a Forest Management Agreement are required to pay for all wood harvested which encourages industry to develop higher value products.¹

Labour Costs: There is a correlation between low labour costs and higher rates of growth in secondary wood manufacturing and several jurisdictions have implemented policies to reduce labour costs. The correlation is most dramatic for Indonesia and Malaysia. Alabama and Mississippi have enacted "right to work" legislation intended to open up the labour market. Policies to reduce premiums for worker's compensation and employment insurance and have reduced labour costs and in Wisconsin where they are among the lowest in the US. They have also reduced employment insurance premiums for businesses that are steady employers. Austria is a notable exception to the correlation since they have maintained both notably high wage rates and a high rate of growth in sales of secondary wood products.

Global Markets and Domestic Policies: Jurisdictions with high levels of growth have shown a greater tendency to adopt policies which do not insulate domestic markets from global markets. In the current climate of reduced barriers to international trade, government policy in some jurisdictions has been devoted to broader infrastructure reforms to improve the climate for investment rather than targeted industrial strategies.

¹ In the past, crown dues were paid according to a complicated system based on the intended end-product -- lumber, rails, posts, pulp, etc. This provided little incentive for industry to ensure wood harvested was put to its highest value end-use.

Conclusion

This review is intended to promote discussion around policy options to further support secondary wood manufacturing in British Columbia. The goal has been to take a brief look beyond the borders of British Columbia and identify policy characteristics associated with high rates of growth in secondary wood manufacturing. Based on the review, the following characteristics appear significant to an effective policy framework to promote secondary wood manufacturing:

1. The delivery of government services is client-focussed and investors and entrepreneurs are presented with a single access point (i.e., a one-stop access model) for policy, program and regulatory information;
2. Public agencies are entrepreneurial and actively seek out and nurture investment;
3. A secondary wood manufacturing niche is defined through careful analysis of factors affecting investment decisions and it is actively promoted;
4. Secondary wood manufacturing is promoted within broader development strategies;
5. Wood manufacturing is export-oriented;
6. Employment is recognized as an *outcome* of programs to increase investment - not a goal in itself;
7. Labour flexibility is promoted;
8. Competition is fostered through privatization and out-sourcing;
9. Tax burdens are minimized;
10. Research & development is used to maintain and improve the competitiveness of secondary wood manufacturers in addition to primary producers;
11. Imports of raw wood and primary wood products are used to offset deficiencies in the species profile of the jurisdiction; and
12. Government policies are used to open up and liberalize markets rather than to insulate businesses and labour from them.

POLICIES AND INCENTIVES USED TO PROMOTE SECONDARY WOOD MANUFACTURING

	I N D O N E S I A	M A L A Y S I A	S A S K A T C H E W A N	A U S T R I A	A L B E R T A	N E W B R U N S W I C K	A L A B A M A	T E X A S	W I S C O N S I N	G E O R G I A	M I S S I S S I P P I	F I N L A N D	B C	L O U I S I A N A	N O R T H C A R O L I N A	S W E D E N	Q U E B E C	W A S H I N G T O N	O N T A R I O	J A P A N	O R E G O N	G E R M A N Y
Industrial Strategy		•	•		•				•			•		•								
One-Stop Access/Coordinating Body			•		•		•	•	•								•					
Non-sectoral approach is dominant			•		•			•	•	•							•					
Formal Value-added Strategy	•	•				•	•					•						•	•	•	•	•
Research & Development	•	•	•	•	•	•			•			•	•	•	•	•	•		•	•	•	•
Training	•	•				•	•	•			•	•		•	•				•	•		
Marketing to Investors/Manufacturers		•					•	•	•	•	•	•					•	•				•
Capital Access Programs	•	•						•			•		•				•	•				•
Marketing to Consumers & Export	•	•		•	•				•			•	•	•			•				•	•
Transportation & Infrastructure				•	•		•	•		•	•						•					
Certification & Environmental Policy		•		•								•		•			•				•	
Supply Development						•								•								•
Labour Policies									•		•						•					
Energy & utilities							•				•						•					
Bans on log exports	•	•												•								
Export taxes	•	•																				
Tariffs	•	•																				
Taxation					•			•			•						•					
Stampage			•																			
Currency/Monetary Policies												•										
Other Programs Identifies																						
Growth in Sales of Secondary Products (1989 to 1999)	2148	876	815	287	240	198	130	111	104	104	96	85	80	73	70	61	59	45	35	30	21	na

1.0 Introduction

Forests have long been considered the heart of the British Columbia, central to its economic and social well-being. Many communities owe their original existence to the forest resource and look to the forests for their future. The promotion of secondary manufacturing of wood products, or the further processing of primary mill wood or wood-based material into semi-finished or finished products, has been advocated as one way to increase the benefits gained from the forest resource.

The issues confronting BC's forest industry are common to many other jurisdictions. For this reason, the experiences of other jurisdictions were examined in an attempt to draw insights and lessons that can inform future policy decisions in BC. Secondary wood manufacturing policies and incentives were examined in nine nations and in some states and provincial jurisdictions within those nations. In total, 22 separate jurisdictions were examined.

Jurisdictions Selected for Review			
	Canada	United States	
Finland			
Sweden			
Germany	• British Columbia	• Alabama	• Texas
Austria	• Alberta	• Georgia	• Washington
Indonesia	• Saskatchewan	• Louisiana	• Wisconsin
Malaysia	• Ontario	• Mississippi	
Japan	• Quebec	• North Carolina	
	• New Brunswick	• Oregon	

An overview of forest industry in each of the jurisdictions selected for review is presented below. A More detailed discussion is provided in the supporting appendices.

Finland and Sweden

Approximately 41.5 million ha of Sweden's and Finland's combined landbase are available for timber production and the harvest surpassed 117 million m³ in 1997. Some 70% of these timberlands are under private ownership. Small woodlots characterize the privately held lands. The forest industry in each country depends exclusively on second growth softwood forests. The harvest is directed to primary production facilities which remain export-oriented, serving mainly the EU market. Major production is paper and paperboard in Finland while lumber production has been most important in Sweden. Forest product exports were valued at US \$10.4 billion in Finland during 1997 and US \$10.3 billion in Sweden.

Substantial gains in productivity have improved the competitiveness of the industry and at the same time the industry has seen greater concentration of ownership, capital intensification and reduced levels of employment. Unionized labour dominates the forestry sector and wage rates are comparable to other developed nations.

JURISDICTIONAL POLICY REVIEW

Gains in secondary wood manufacturing have been made in each country. Wood building components comprise a significant portion of secondary wood manufacturing in Finland while joinery and furniture is produced in lesser quantities. In Sweden, furniture production is much more prominent and is export-oriented while joinery products and the wood packaging industry make smaller but significant contributions.

Germany and Austria

Together the harvest in Germany and Austria in 1997 was approximately 61 million m³. This volume was removed from a forest landbase of 11.1 million ha. Austrian forests are predominantly softwood while a mix of both soft and hardwoods can be found in Germany. Small private woodlots make up the majority of the landbase available for timber production in each country. About half of the wood products produced in each country are for the export market. In 1997, exports totalled just under US \$15.5 billion. Paper and paperboard accounted for close to 60% of exports. Austria is the 4th largest lumber exporter in the world after Canada, Sweden and Finland. Secondary wood processing is focussed on cabinetry and furniture production. Wage rates remain relatively high in the wood processing sector and do not appear to have constrained growth in secondary wood products. The forest products industry in Austria and Germany is characterized by small and medium-sized enterprises.

Malaysia and Indonesia

Just under 11 million ha comprise the production forest in Malaysia while Indonesia's land base available for timber supply is estimated at 155 million ha. The resource in both countries is under public ownership exclusively. Second growth timber and increasingly on commercial plantations are support the industry. In 1997 the value of wood product exports was just over US \$9 billion. Malaysia's manufacturing sector is dominated by sawmilling, veneer and plywood production. Indonesia's manufacturing sector is dominated by panel products, wood pulp and paperboard. Secondary wood manufacturing has increased dramatically in the last few years with increases in furniture production being most significant in Indonesia while the production of mouldings is predominant in Malaysia. The industry remains relatively labour intensive as low wages have provided less incentive for capital intensification.

Japan

A little over 12 million ha are available for wood supply in Japan. With domestic log production at just over 21.5 million m³ (of which 19.6 million m³ was hardwood) fibre supply cannot satisfy the domestic market and just under 25 million m³ in log supplies were imported by Japan in 1997. The value of wood product imports exceeded US \$17 billion in 1997 while the value of exports was just over US \$1.6 billion. Wood products are produced primarily for the domestic market. As in other developed countries, employment levels supported by wood manufacturing have declined and there has been concentration of ownership. Historically, Japan has protected its manufacturing sector through various non-tariff barriers such as labelling requirements, procurement policies and building codes. Many of these barriers began to fall in the last few years, which has improved access to the Japanese market.

JURISDICTIONAL POLICY REVIEW

United States

Washington and Oregon

The timberlands of Washington and Oregon cover about 13 million ha. Approximately 60% of this area is in public ownership. Harvest levels have declined significantly over the 1990's in each state in response to growing harvesting constraints on public lands. Together they harvested under 53 million m³ in 1997. Employment levels sustained by the forest industry have declined as well over recent years. Wood products are produced primarily for the domestic market and exports totalled US \$3.4 billion in 1998. Lumber remains the primary export while paper products are a close second. Millwork and cabinetry are the primary types of products produced through the secondary wood products sector. Secondary wood manufacturing has been pursued less enthusiastically than broader diversification and adjustment strategies. Although the industry has downsized in both states in the last decade, Oregon remains the number one producer of lumber in the US.

Southern Region

The southern region of the United States is made up of thirteen states, which together contain about 40% of the timberland in the US. The softwood harvest in the southern region accounts for 53% of all softwood removed in the US and hardwood accounts for about 60% of the US total. Most of the timberlands in the Southern States are privately owned. In the states examined in this review (Alabama, Georgia, Louisiana, Mississippi, North Carolina and Texas) private ownership ranges from a low of 90% of the forest land base to a high of 95%. For the six states examined, exports totalled US \$4.1 billion in 1998. Paper products dominate the export trade in the southeast. However, they have lost ground to secondary wood products in the last few years. The strongest components of the secondary wood manufacturing sector include furniture, prefabricated building components, millwork and cabinetry. The region has somewhat lower labour costs than the rest of the United States and many regions have actively promoted secondary wood manufacturing.

Wisconsin

Wood products are produced primarily for the domestic market in Wisconsin. Exports have grown considerably however. Paper products dominate the export market and in 1998 represented 77% of the US \$592 million worth of wood products exported. Wisconsin has seen a high rate of growth in the sales of secondary wood products. Much of this growth has been credited to policies which have reduced labour costs and taxes.

Canada

British Columbia

The forest landbase suitable for harvest is approximately 49 million ha and the harvest was about 69 million m³ in 1997.² The value of industry shipments reached about US \$16.2 billion in 1997 and exports accounted for over half of this value (US \$10.1 billion). Commodity products dominated the market with lumber the principal export. The United States is the major export market. The secondary wood manufacturing sector has been actively promoted in BC in recent

² These estimates are derived from the Canadian Forest Service's NFD. Data from the CFS was used to ensure that data from each province in Canada was comparable.

JURISDICTIONAL POLICY REVIEW

years yet remains a minor contributor to the economy, and is dominated by small and medium-sized businesses. Remanufactured products (i.e., resawn products and finger-jointed studs) and shake and shingles are the most significant in terms of their economic contribution to the economy. Cabinet and furniture manufacturing capacity remains small.

Alberta and Saskatchewan

Forestry is the third largest primary economic sector in Alberta and in 1997, industry shipments totalled some US \$2.7 billion in 1997 and exports about US \$1.6 billion. The forest landbase suitable for harvest is approximately 23 million ha and the allowable harvest is about 22.1 million of which 12.8 are conifers and the remainder are deciduous. Alberta has affirmed the importance of secondary wood manufacturing in its future and has appointed a task force to examine secondary wood manufacturing in the province. Millwork accounts for about 55% of all sales of secondary wood products. Saskatchewan's timberlands total 12 million m³ and 97% of this area is under public ownership. Just over 4 million m³ of timber was harvested in 1997. Wood products generated US \$590 million in sales in 1996 with exports totalling about US \$272 million. The province has shown rapid growth in the wood products sector, but the sector remains small.

Ontario and Quebec

Ontario's timberlands total 40.7 million ha, and 86% of these lands are under public ownership. Over 24 million m³ of timber were harvested in 1997. Quebec's timberlands total 53.3 million almost exclusively in the public domain. They are almost all publicly owned and saw a harvest of over 40 million m³ in 1997.

In 1996, the forest products industry shipped approximately US \$20.6 billion worth of forest products. The value of exports, primarily to the United States, is estimated to be US \$11.9 billion.³ Paper and allied industries accounted for the greatest proportion of these exports. In Ontario, secondary wood manufacturing makes a substantial contribution to the economy and accounted for over 60% of sales of wood products in 1995. Cabinetry and millwork are the primary types of products produced by the secondary wood manufacturing sector. The predominant product produced by Quebec's secondary wood processing sector is cabinetry.

New Brunswick

Private land ownership is much higher in New Brunswick (and in Atlantic Canada generally) than in the rest of Canada. Productive forest land totals 6 million ha in New Brunswick and 50% of this is under private ownership. These timberlands supported a harvest of 11.2 million m³ in 1997. The NB government estimates that 35,000 individuals own private woodlots in the province. The wood products manufacturing sector depends almost exclusively on softwood. The majority of the harvest is directed to primary processors and the secondary manufacturing sector remains small with sales totalling about US \$108 million. Millwork accounts for close to 60% of the value of sales of secondary wood products.

Forest Area and Harvest Volumes by Ownership Class⁴

The selected jurisdictions vary significantly in terms of total forested area and the degree to which forested lands are under public and private ownership. Indonesia, Malaysia and provinces within Canada typically have higher levels of public ownership of the forest resource while the

³ http://www.mnr.gov.on.ca/MNR/forests/t&t_forindustry/industry.htm

⁴ Sources: Statistical Handbook of Forestry, Forestry Agency, Japan; The State of Canada's Forests - The People's Forests 1997-1998; UN/ECE Timber Database; FAS Country Profiles.

JURISDICTIONAL POLICY REVIEW

United States, Japan and the European nations have lower levels. This pattern is reflected in the relative dependence on timber volumes originating from public or private lands for each of the jurisdictions. Highest rates of growth in sales of secondary wood products have generally been associated with higher degrees of dependence on fibre volumes from private sources. The most notable exceptions are Indonesia and Malaysia and Saskatchewan and Alberta.

Table 1
Forest Area and Harvest Volumes by Ownership Class⁵

Jurisdiction	TIMBERLANDS			HARVEST			Growth in Sales over Ten Years
	Area	Percent Publicly Owned	Percent Privately Owned	Volume Removed	Percent Public Lands	Percent Private Lands	
	('000 000 ha)	(%)	(%)	('000 m ³)	(%)	(%)	(%)
Canada							
British Columbia	49.1	96	4	69,298	89	11	17%
Alberta	23.3	94	6	22,224	86	14	58%
Saskatchewan	12	97	3	4,136	97	3	80%
Ontario	40.7	86	14	24,649	83	17	-20%
Quebec	53.3	85	15	40,470	77	23	9%
New Brunswick	6.0	50	50	11,226	44	56	8%
United States							
Alabama	8.9	5	95	46,580	3	97	66%
Georgia	9.6	7	93	50,934	4	96	48%
Louisiana	5.6	9	91	27,064	4	96	25%
Mississippi	7.5	10	90	40,191	5	95	42%
North Carolina	7.6	10	90	34,108	5	95	23%
Oregon	7.8	57	43	26,151	22	78	-12%
Texas	4.8	7	93	27,147	6	94	53%
Washington	6.5	62	38	26,585	21	79	5%
Wisconsin	6.4	29	71	16,956	24	76	48%
Finland	19.5	30	69.9	52,051	8	92	-8%
Sweden	22	30	69.8	65,500	17	83	9%
Germany	11.3	59	41.4	41,000	Na	Na	Na
Austria	3.9	18	81.9	19,782	Na	Na	28%
Indonesia	155	100	0	36,000	100	0	43%
Malaysia	18.5	100	0	30,280	100	0	153%
Japan	25.1	42	58	25,600	Na	Na	-13%

Sources: USFS, FIA Database; TPO Database; Finnish Statistical Yearbook of Forestry; CFS, NFDP Database (nonreserved timber including unclassified status); Swedish Statistical Yearbook of forestry; USDA GAIN data, FAO data.

⁵ Sources: Statistical Handbook of Forestry, Forestry Agency, Japan; The State of Canada's Forests - The People's Forests 1997-1998; UN/ECE Timber Database; FAS Country Profiles.

Sales, Employment and the Number of Establishments

The contribution of secondary wood products to wood product manufacturing varies in each jurisdiction but there are broad regional trends as illustrated in Table 2. Eastern Canada, many of the states from the Southeastern part of the US, Finland, Sweden and Japan all have relatively strong secondary wood manufacturing sectors that account for about half of all sales of wood products and employ about half the workforce engaged in wood products manufacturing. Germany, Austria, Texas and Wisconsin are even more dependent on secondary wood manufacturing. At the other end of the spectrum, Indonesia, Malaysia, BC and the Pacific Northwest, for example, are more dependent on primary production.

Table 2⁶
Sales, Employment and the Number of Establishments Involved in Primary and Secondary Wood Manufacturing⁷

Jurisdiction	Wood Products			Secondary Wood Products			
	Total Sales	Jobs	No. of Establishments	Total Sales	Jobs	No. of Establishments	Ten Year Sales Growth
	(\$ million)	(#)	(#)	(\$ million)	(#)	(#)	(%)
Canada							
B.C.	8,106	40,357	686	904	8,124	361	17%
Alberta	1,558	12,038	219	621	6,094	146	58%
Saskatchewan	245	1,892	55	131	1,244	45	80%
Ontario	3,462	32,227	818	1,597	18,947	656	-20%
Quebec	5,138	43,009	1,264	1,917	23,045	945	9%
New Brunswick	734	5,692	139	196	1,742	75	8%
United States							
Alabama	5,628	34,500	1,811	2,839	20,700	542	66%
Georgia	5,637	34,400	1,567	3,155	21,200	620	48%
Louisiana	2,411	13,000	790	1,168	6,800	165	25%
Mississippi	4,249	27,700	1,222	1,702	22,700	244	42%
N. Carolina	5,568	43,300	1,909	3,367	26,900	684	23%
Oregon	10,294	48,500	1,946	4,767	25,900	505	-12%
Texas	5,678	41,200	1,590	4,086	33,500	979	53%
Washington	7,005	30,200	1,791	1,705	13,500	506	5%
Wisconsin	3,803	32,100	1,290	3,001	24,900	579	48%
Finland	na	33,000	2,807*	Na	15,000	1,242*	-7.5%
Sweden	6,612	29,702	709	1,803	13,798	327	9%
Germany	Na	278,427	24,343	Na	154,000	Na	Na
Austria	Na	86,000	9,211	Na	76,500	7,511	28%
Indonesia	Na	560,104	2,625	Na	156,389	151	43%
Malaysia	Na	148,100	1,629	Na	40,000	304	153%
Japan	75,652	413,000	30,153	34,834	207,000	14,690	-13%

Note: Some data sources report "value-added" rather than "sales". As a result, total sales estimates could not be determined for Finland, Germany, Austria Indonesia and Malaysia. Data sources: Eurostat, UNIDO, ITTO, Japan Statistical Agency, Forestry Agency (Japan), US Census Bureau, and Statistics Canada.

⁶ Estimates have been made for illustrative purposes only.

⁷ Monetary values are expressed in current dollar terms. Currencies were first adjusted for inflation then converted to current US dollar values. Exact comparisons across jurisdictions are not always possible due to the level at which information was presented by the organizations.

JURISDICTIONAL POLICY REVIEW

Product Mix

Table 3 identifies the product mix of secondary wood products for each of the selected jurisdictions along with estimated growth rates in the value of sales of secondary wood products (data permitting). Jurisdictions have tended to focus on one or two types of secondary wood products. Western Canada and New Brunswick are most dependent on remanufacturing and millwork while Eastern Canada is dominated by cabinetry-related business. In the US, millwork and cabinetry remains the dominant type of business, although in Alabama secondary wood manufacturers are clustered around the pre-fabricated wooden building industry. Furniture production accounts for a substantial proportion of secondary wood manufacturing in parts of the South. Millwork, prefabricated building components and furniture are dominant in Finland and Sweden while furniture and fine cabinetry are more pronounced in Germany and Austria. Malaysia and Indonesia have seen significant growth in furniture production and mouldings and other types of millwork also make up a substantial portion of secondary wood manufacturing. Typically, jurisdictions with higher rates of growth in the sales of secondary wood products generate the majority of the sectoral revenue through the production of finished goods.

Table 3
Product Mix - Secondary Wood Manufacturing^a

	Unfinished Good as a % of Total Sales: • Shakes and shingles • Remanufacturing, etc.	Semi-finished as a % of Total Sales: • Millwork • Mouldings, etc.	Finished as a % of Total Sales: • Cabinetry • Furniture • Pre-fabricated houses, etc.	Secondary Products Ten Year Sales Growth
Malaysia	9	14	77	153%
Saskatchewan	60	—	40	80%
Alabama	28	8	64	66%
Alberta	61	6	33	58%
Texas	16	14	70	53%
Wisconsin	23	15	62	48%
Georgia	17	10	73	48%
Indonesia	16	53	31	43%
Mississippi	67	14	19	42%
Austria		Secondary	Dominant	28%
Louisiana	14	46	12	25%
North Carolina	16	7	77	23%
British Columbia	65	2	34	17%
Sweden	18	14	68	9%
Quebec	59	7	33	9%
New Brunswick	59	6	35	8%
Washington	27	24	49	5%
Finland		Dominant	Secondary	-7.5%
Oregon	7	36	57	-12%
Japan		Secondary	Dominant	-13%
Ontario	49	13	38	-20%
Germany	—	—	—	Na

Data sources: Eurostat, UNIDO, ITTO, Japan Statistical Agency, Forestry Agency (Japan), US Census Bureau, Statistics Canada.

^a Estimates have been made for illustrative purposes only.

Wage Rates, Employment Levels and Adding Value to Wood Products

For each of the national jurisdictions examined, employment estimates and average wage rates have been identified for three broad categories of wood-related manufacturing including: wood products (except furniture), furniture, and paper and paper products (see Table 4). In this case, value-added represents the value of shipments minus the cost of materials, supplies, fuel etc. Jurisdictions with the highest rate of growth in value-added (Malaysia and Indonesia) also had the most significant growth in the labour force and the lowest wage rates. Wage rates in other countries are similar, with paper and paper products associated with the highest wages, wood products with the second highest and furniture products with the third highest. Other nations have tended to offset high wage rates by substituting capital for labour. It is notable that Austria has experienced a relatively high rate of growth in value added for furniture products but has also maintained one of the highest wage rates for this sector.

Table 4
Comparison of Value Added, Wage Rates, and Persons Employed

Jurisdiction	Type of Manufacturing	Value Added			Wages & Salaries			Employees	
		1985	1987	Avg. Growth Rate 1985-97	1985	1997	1985	1985	1997
		(\$millions)	(\$millions)	(%)	(\$/Worker)	(\$/Worker)	(#)	(#)	(%)
Austria	Wood Products, Except Furniture	298	916	5.25%	9,262	27,074	16,700	15,700	-6%
	Furniture, except metal	407	1,577	2.74%	8,780	27,850	28,900	32,900	14%
	Paper & Products	500	1,567	4.52%	13,523	42,921	19,300	18,042	-7%
Canada	Wood Products, Except Furniture	3,237	8,113	0.12%	18,990	29,338	100,000	107,000	7%
	Furniture, except metal	1,333	2,355	3.01%	13,858	20,435	62,000	62,000	19%
	Paper & Products	5,412	8,604	0.73%	24,005	37,336	113,000	99,000	-12%
Finland	Wood Products, Except Furniture	652	1,345	1.32%	10,019	27,265	35,525	23,964	-33%
	Furniture, except metal	215	398	-0.86%	9,676	24,052	11,806	8,957	-24%
	Paper & Products	1,845	5,987	3.58%	14,434	38,689	43,751	37,139	-15%
Germany	Wood Products, Except Furniture		not available		23,687	229,841	129,000	112,000	-13%
	Furniture, except metal		not available		24,942	331,071	182,000	154,000	-15%
	Paper & Products		not available		27,401	333,398	195,000	159,000	-18%
Indonesia	Wood Products, Except Furniture	612	2,808	6.08%	908	1,283	168,600	403,715	139%
	Furniture, except metal	18	405	4.04%	732	1,002	12,300	156,389	1171%
	Paper & Products	110	1,287	15.25%	1,131	2,257	21,500	94,321	339%
Japan	Wood Products, Except Furniture	6,888	15,436	-2.22%	10,639	28,421	305,000	250,000	-18%
	Furniture, except metal	3,798	12,030	-1.48%	11,035	33,479	155,000	160,000	3%
	Paper & Products	9,760	31,998	2.84%	14,185	38,731	245,000	266,000	9%
Malaysia	Wood Products, Except Furniture	263	1,542	10.87%	2,557	3,421	54,300	148,100	173%
	Furniture, except metal	40	392	10.87%	2,390	3,881	9,000	40,000	344%
	Paper & Products	55	482	5.17%	2,664	5,561	7,000	24,100	244%
Sweden	Wood Products, Except Furniture	1,154	1,994	1.30%	10,518	23,833	44,300	33,500	-24%
	Furniture, except metal	285	458	0.10%	9,988	22,253	11,400	10,400	-12%
	Paper & Products	2230	3,645	1.42%	12,998	27,774	53,900	42,800	-21%
United States of America	Wood Products, Except Furniture	15,390	32,558	1.01%	17,159	24,792	447,000	539,000	21%
	Furniture, except metal	13,250	25,332	2.32%	15,461	24,907	423,000	468,000	11%
	Paper & Products	40,390	83,118	2.36%	25,388	38,619	605,000	587,000	-3%

Source: UNIDO Industrial Statistics Database.

2.0 Factors Affecting Investment Decisions

The decision on where to locate secondary wood manufacturing is complex, involving the interaction of many factors. A recent study of secondary wood manufacturers in Texas examined location selection factors and found that property taxes, labour costs, and cost of land were most important to manufacturers. Other production costs (construction, raw materials and utilities) were also considered very important to manufacturers, while access to capital was less so. The weighting of these factors would probably be different in BC, but the table provides a current and general indication of the key factors and their importance.

Table 5
Location Selection Factors for Secondary Wood Manufacturers⁹

	Most important	←————→	Least Important
Most Important	Property Taxes	Availability of skilled labour	Proximity to transport routes
	Labour costs	Pollution/emissions regulations	Access to capital/financing
	Facility and land costs	Personal factors & cost of living	Local market size
↑	Room for expansion & site suitability	Worker's comp. & labour laws	Access to freight haulers
↓		Proximity to markets & potential growth	Proximity to intermediaries
Least Important	Raw material costs	Gov't incentives	Less competition for sales
	Other state/local taxes	Proximity to end markets	Nearness to suppliers & export markets
	Utility costs	Nearness to lumber supplier	Nearness to trade show locations

The policies examined in this discussion paper are designed to enhance the attractiveness of investment, in particular locations. In essence, public policy is designed to effect changes in the factors considered by manufacturers in their decisions regarding where to locate, relocate or expand. The policies identified through the review address one or more of the factors identified in the table above.

⁹ Judd H. Michael, Joanna Teitel and James E. Granskog, "Production Facility Site Selection Factors for Texas Value-Added Wood Producers", *Forest Products Journal*, Vol. 48, No. 7.8, pp. 27-32.

3.0 Policies and Initiatives

This section discusses development trends in secondary wood manufacturing and the associated mix of policies. The discussion outlines broad relationships between growth in terms of sales of secondary wood products and public policy. Policies for each of the jurisdictions examined have been identified in Table 6.

Jurisdictions with Higher Rates of Growth.

Alberta, Saskatchewan, Alabama, Georgia, Texas, Wisconsin and Mississippi are among the jurisdictions with the highest growth rates. While it is accepted that high rates of growth may be associated with non-policy factors, policies for most of these jurisdictions appear designed to be:

- comprehensive and non-sectoral;
- supportive of a "critical mass" of activity to attract investment;
- outward looking (export trade-oriented);
- focused on marketing;
- entrepreneurial; and
- non-subsidizing.

It should also be noted that these observations are made with the caveat that in some of the jurisdictions, high rates of growth may be associated with non-policy factors. For example, Malaysia and Indonesia share some common policy features with other "successful" jurisdictions, but it is their low wage rates combined with export restriction on primary products that have likely had the greatest impact on growth. At the same time the relatively recent development of forestry in Alberta and Saskatchewan and the recent allocation of harvesting rights may be one of the more significant factors contributing to high rates of growth.

Jurisdictions with Lower Rates of Growth

Ontario, Japan, Oregon, Washington, New Brunswick are included among those jurisdictions with lower rates of growth. These jurisdictions appear to be more dependent upon:

- targeted programs; and
- fewer policy tools.

In general, a less coordinated approach to attracting increased investment in manufacturing seems to be typically associated with lower rates of growth. There are notable exceptions to the rule including Finland and Sweden which have had lower rates of growth but whose policies have characteristics that are common to jurisdictions with higher rates of growth.

Commonalities and Differences

Most of the jurisdictions have introduced research and development programs and have recognized a government role in employee training. These are identified as key areas where the business sector lacks the required economies of scale to make the needed investments or where a skills gap has been identified in the workforce that impedes investment in secondary wood manufacturing.

JURISDICTIONAL POLICY REVIEW

Relative to other jurisdictions, North America has placed less emphasis on marketing support while European and Asian nations have directed much more effort in this area. Asian nations, have tended to make greater use of non-tariff measures, such as bans on log exports, export duties and industrial standards, to encourage the development of secondary wood manufacturing. These efforts have been successful in Malaysia and Indonesia, but are viewed as short-sighted solutions by some critics.

JURISDICTIONAL POLICY REVIEW

TABLE 6: POLICIES AND INCENTIVES USED TO PROMOTE SECONDARY WOOD MANUFACTURING

	MALAYSIA	SAKATA CHEWAN	ALABAMA	ALBERTA	TEXAS	WISCONSIN	GEORGIA	INDONESIA	MISSISSIPPI	AUSTRIA	LOUISIANA	NORTH CAROLINA	BRITISH COLUMBIA	SWEDEN	QUEBEC	NEW BRUNSWICK	WASHINGTON	FINLAND	OREGON	JAPAN	ONTARIO	GERMANY
Industrial Strategy	•	•		•		•					•							•				
One-Stop Access/Coordinating Body		•	•	•	•	•	•							•								
Non-sectoral approach is dominant		•	•	•	•	•	•		•					•						•	•	
Formal Value-added Strategy	•		•					•		•	•	•	•	•	•	•	•	•	•	•	•	•
Research & Development	•	•		•		•					•	•	•	•	•	•	•	•	•	•	•	•
Training	•		•		•	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•
Marketing to Investors/Manufacturers	•		•		•	•	•	•	•					•	•	•		•	•	•	•	•
Capital Access Programs	•				•			•	•	•			•	•	•			•	•	•	•	•
Marketing to Consumers & Export	•			•	•	•	•	•	•	•			•	•	•			•	•	•	•	•
Transportation & Infrastructure	•		•	•	•	•	•	•	•	•				•	•			•	•	•	•	•
Certification & Environmental Policy	•									•			•	•		•		•	•			•
Supply Development						•			•					•		•						
Labour Policies									•					•								
Energy & utilities			•						•					•								
Bans on log exports	•							•					•									
Export taxes	•							•														
Tariffs	•							•														
Taxation				•	•				•				•	•								
Stampage		•																•				
Currency/Monetary Policies																						
Other Programs Identifies					•				•													
Growth in Sales of Secondary Products (1989 to 1999)	153	80	66	58	53	48	48	43	42	28	25	23	17	9	9	8	5	-7.5	-12	-13	-20	na

Certification - Market Incentives Complementing Regulation

In the last few years, some jurisdictions have directed their attention to developing frameworks for forest certification to prove the sustainability of forest management. Finland, Sweden, Germany and Austria have also identified certification as a tool to strengthen and promote the acceptance and demand for wood products. In 1998, these nations, along with Norway and France initiated the development of a European certification framework that is voluntary, adaptable to national circumstances and takes into account the predominance of forest holdings of a small size. Finland has pursued certification most vigorously and has anticipated that large scale certification of forests will begin in 1999. These nations have made strong statements regarding the marketing advantage that can be realized through certification. Malaysia, Indonesia and the ITTO (International Tropical Timber Organization) have embraced certification as well. In particular, Malaysia has identified certification as one means to overcome growing market resistance to their wood products in nations like Germany and Austria.

Marketing

Initiatives to improve access to export markets and to assist in developing an export trade are found in many of the jurisdictions with higher rates of growth. For example, International Outreach Consultants (from the Wisconsin Department of Commerce) work one-on-one with Wisconsin businesses, and offer:

- technical assistance for all aspects of the export process;
- explanations of foreign business practices and channels of distribution;
- market research advice and direction;
- locate agents or distributors through networks of international representatives;
- emergency assistance in solving export problems; and
- a Start-up Guide for International Business.

Similar programs are offered in some states in the Southern US with additional programs aimed at reducing export-related costs (storage etc.).

The One-stop Access Model - Improving Access to Government Services -

Few jurisdictions have marketed themselves to investors and fewer still have done it in a coordinated manner with enough flexibility to respond to unique investor issues. Yet, the jurisdictions that have taken a flexible, coordinated approach to marketing have performed well, showing higher rates of growth in sales for secondary wood products. Alabama, Texas, Wisconsin are most notable.¹⁰ In Texas and Wisconsin, marketing to investors has been undertaken by non-sectoral economic development agencies and efforts are not targeted specifically to secondary wood manufacturers. *Forward Wisconsin*, is a public-private partnership whose marketing efforts centre on 10 sectors of the economy, one of which is forestry. In Alabama, the Forestry Commission takes the lead, marketing to wood processors through the Alabama Forestry TEAM. The TEAM, works closely with its clients to identify and respond to their needs, drawing on programs and initiatives across government. In many respects they take on the role of "deal maker". The over-riding concern of these various approaches has been to provide a single access point to furnish potential investors with relevant policy, program and regulatory information required to locate, relocate or expand a particular business.

¹⁰ Sweden has adopted a similar approach but has had lower growth rates.

The Number of Policy Tools Used to Promote Secondary Wood Manufacturing

Jurisdictions with higher rates of growth happen to make greater use of policy tools and often view the promotion of secondary wood manufacturing within the broader context of industrial development. This has allowed governments to pool scarce program resources to address issues that span industries and help ensure that programs designed for one sector do not unnecessarily constrain other parts. By contrast, other jurisdictions have designed strong policies targeted specifically at value-added activities. These jurisdictions appear to have been less successful at coordinating policy development and as a result have often been obliged to adapt particular policies to the broader policy environment. Importantly, targeted policies may succeed in attracting only one type of industrial activity, or one type of investor, which can have a damping impact on overall competitiveness.

Research & Development, Training and Marketing

Compared to primary processors, the secondary wood manufacturing industry tends to be fragmented with a large number of small and medium-sized enterprises. These enterprises often lack the resources to undertake the marketing, training, research and development and supply chain development required to ensure long-term competitiveness. In response, some jurisdictions have implemented policies to pool resources among businesses or develop programs which allow them to enhance their competitiveness. Most jurisdictions have actively promoted research and development and training. New Brunswick has recently established the Woodworking Centre for Excellence which offers contracted training expertise to secondary wood manufacturing industries. British Columbia has also promoted training through initiatives such as the Value-Added Skills Centre and WoodLINKS. Marketing efforts have often been pooled through government assistance and encouragement, such as Oregon's Northwest Wood Products Association (NWPA) or the Malaysia Timber Council (MTC).

Development of Industrial Clusters and Networks

Many of the policies adopted by jurisdictions with high rates of growth in secondary wood manufacturing are intended to strengthen the linkages between businesses with common supply chains, or to concentrate small businesses so that they can reduce overhead costs. The state of North Carolina has developed a program to improve cooperation between wood manufacturers whose products and needs complement each other. Malaysia has supported the development of industrial parks to provide common infrastructure and resources for small sized furniture producers who would be unable to operate in isolation. Finland has promoted the development of *industrial clusters* around forestry. In Finland, secondary manufacturing is viewed as part of the forestry cluster along with machinery, chemical suppliers and so on. The goal behind developing a coherent cluster is to ensure that forestry activities draw upon other Finnish businesses and industries.¹¹

Fibre Supply

Typically, jurisdictions that have identified fibre access as an issue continue to have a large proportion of their forest landbase under public ownership. The jurisdictions with a high degree of public ownership and high rates of growth in secondary wood manufacturing have tended to

¹¹ Finnish Forest Industries Federation (1998) *Key to the Finnish Forest Industry*, Helsinki: Finnish Forest Industries Federation, pp. 77-78.

JURISDICTIONAL POLICY REVIEW

adopt policies which act to reduce the overall scope of the markets available to the primary processors and as a result reduced profitability of primary wood processing. The approach taken by Indonesia and Malaysia has been to impose a combination of log bans, lumber bans and export taxes on primary wood products. These measures increase the cost of export oriented primary wood manufacturing and have increased the flow of fibre to secondary manufacturers. In Saskatchewan, forest companies not holding a Forest Management Agreement are now required to pay for all wood harvested which encourages industry to produce the highest value product possible with the wood they harvest.¹²

Other jurisdictions have adopted policies that make the supply of fibre to primary processors contingent upon the tenure holder providing fibre to secondary manufacturers. In British Columbia, innovative tenure arrangements including those administered through the Small Business Forest Enterprise Program have improved the flow of fibre to secondary manufacturers. New Brunswick has also designed tenure arrangements which requires that a portion of timber harvested be allocated to secondary manufacturers.

Labour Costs

There is a correlation between low labour costs and higher rates of growth in secondary wood manufacturing. Indonesia, Malaysia, Alabama, Wisconsin and Mississippi serve as examples. As noted in Table 4, Indonesia and Malaysia have the lowest wage rates of all the jurisdictions examined and have had the highest rates of growth. Alabama and Mississippi have enacted "right to work" legislation which has been intended to open up the labour market. Policies to reduce premiums for workman's compensation and employment insurance have also reduced labour costs and in Wisconsin, payments are now among the lowest in the country. Wisconsin has also reduced employment insurance premiums for businesses that are steady employers. There are notable exceptions however. Wages rates are high in Austria and at the same time there has been a relatively high rate of growth in sales of secondary wood products.

Identifying Barriers to Investment - the Environmental Scan

Efforts to promote secondary wood manufacturing are in their infancy in many of the jurisdictions examined. Some have taken strong initial steps in policy and program development by examining first the state of secondary manufacturing and the barriers to growth. The state of Virginia, for example, appointed a Task Force to examine the forest industry which reported its findings in 1997. Atlantic Canada, through the Atlantic Canada Opportunities Agency (ACOA) has recently undertaken an overview of the current state of the value-added component of the industry and the barriers to growth. Other jurisdictions have taken more ad hoc approaches to policy development.

The Allocation of Resources to Support Policies

The level of commitment in terms of government staffing and budget affects the implementation of the policy. Some jurisdictions have not progressed far beyond developing a policy statement while others have designed programs and committed significant resources to implementation and delivery. Two examples are offered to demonstrate the extremes. Ontario's recent "Forest Accord" and the "Living Legacy Trust" are designed to compliment existing protected areas

¹² In the past, crown dues were paid according to a complicated system based on the intended end-product -- lumber, rails, posts, pulp, etc. This provided little incentive for industry to ensure wood harvested was put to its highest value end-use.

JURISDICTIONAL POLICY REVIEW

strategies and to offset any negative impacts to the forest industry. Promotion of secondary wood processing is an explicit objective of the Trust. At the same time, only \$7 million of the \$30 million trust fund is allocated to the promotion of secondary manufacturing. By contrast BC's Forest Renewal BC targeted nearly \$22.4 million for its value-added program in 1998/99.¹³

Secondary Wood Manufacturing in a Global Market Place

Jurisdictions with high levels of growth have shown a greater tendency to adopt policies which do not insulate domestic markets from global markets. Tariff restrictions have been declining over the last several years and are expected to continue this trend. Commitments made through the General Agreement on Tariffs and Trade (GATT) and the most recent Uruguay Round of negotiations will see the upper bounds of tariff restrictions substantially reduced. For most primary wood products, tariffs are in the 5% range. Although tariffs associated with secondary wood products have also declined, they remain relatively high, in the 10-15% range.

Bilateral and regional trade agreements have also been responsible for reductions in tariff rates. The Association of Southeast Nations (ASEAN), the Asia-Pacific Co-operation (APEC), the European Union (EU), the North American Free Trade Agreement (NAFTA), and the Mercosur Agreement (South America Common Market) have all addressed the issue of tariff barriers. In this climate of reduced barriers to international trade, government policy in some jurisdictions has been devoted to broader infrastructure reforms to improve the climate for investment rather than targeted industrial strategies.

Change in the Nature of Government Interventions

Quite apart from the specifics of the secondary wood manufacturing industry, many jurisdictions have found over the past twenty years that limiting government intervention has had a more positive effect on industrial performance and job creation than has continued effort to "fine tune" industrial policy. This approach has led to a move of government efforts away from policy development for specific industries to activities designed to enhance the business environment in general. Such policies have included, initiatives designed to:

- enhance labour flexibility (Wisconsin's reduced workman's compensation contribution, and less onerous unemployment scheme serve as nearby examples);
- encourage competition by privatization and out-sourcing (e.g. Malaysia and Indonesia's efforts to privatize industry);
- reduce tax levels (e.g. Wisconsin's lowering of property tax rates);
- enhance the role of the market in decision-making (e.g., reduction of tariff barriers, Japan's recent changes to its building code, procurement and labeling policy); and
- the removal of legislated protection for local industries (New Zealand's efforts to level the playing field for all businesses is an example).

Many of these issues can only be dealt with at the political level of government, and may not be within the influence of the Ministry of Forests. Nevertheless, a recognition of the effects of not addressing such issues is critical to the development of realistic expectations regarding the performance of industrial policy.

¹³ Forest Renewal BC (n.d.), *Forest Renewal BC Value-Added Strategy*.

4.0 Conclusions

This review is intended to promote discussion around policy options to further support secondary wood manufacturing in British Columbia. The goal has been to take a brief look beyond the borders of British Columbia and identify policy characteristics that are associated with high rates of growth in secondary wood manufacturing.

The discussion has not explored the "effectiveness" of policy responses and any promising directions identified through this review would have to be more closely examined. As a first step we have identified and commented on major policy types associated with growth in secondary wood manufacturing over a number of jurisdictions. Based on that first step, several traits common to many of the jurisdictions with high rates of growth in secondary wood manufacturing sectors have been noted:

1. The delivery of government services is client-focussed and investors and entrepreneurs are presented with a single access point (i.e., a one-stop access model) for policy, program and regulatory information;
2. Public agencies are entrepreneurial and actively seek out and nurture investment;
3. A secondary wood manufacturing niche is defined through careful analysis of factors affecting investment decisions and it is actively promoted;
4. Secondary wood manufacturing is promoted within broader development strategies;
5. Wood manufacturing is export-oriented;
6. Employment is recognized as an *outcome* of programs to increase investment - not a goal in itself;
7. Labour flexibility is promoted;
8. Competition is fostered through privatization and out-sourcing;
9. Tax burdens are minimized;
10. Research & development is used to maintain and improve the competitiveness of secondary wood manufacturers in addition to primary producers;
11. Imports of raw wood and primary wood products are used to offset deficiencies in the species profile of the jurisdiction; and
12. Government policies are used to open up and liberalize markets rather than to insulate businesses and labour from them.

* * * * *

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